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ABSTRACT

Israeli Kibbutz and city children, age 8-11, were compared in three experiments in which cooperative-competitive behavior was assessed. City children from the United States were also included in Experiment 3. In Experiments 1 and 2, groups of four children played a cooperation board game in which children represented only themselves in one condition and represented a group in another. Kibbutz groups were more cooperative and were more influenced by the group representation than were city groups. In experiment 3, groups were compared in their selection of a group versus an individual goal. Kibbutz children gave more often to the group than did Israeli or U.S. city children, even under a condition in which the group oriented response was economically nonadaptive. (Author)

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BETWEEN AND WITHIN GROUP COOPERATION AND COMPETITION AMONG KIBBUTZ AND NON-KIBBUTZ CHILDREN

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ABSTRACT

Israeli Kibbutz and city children, age 8-11, were compared in three experiments in which cooperative-competitive behavior was assessed. City children from the United States were also included in Experiment 3. In Experiments 1 and 2, groups of four children played a cooperation board game in which children represented only themselves in one condition and represented a group in another. Kibbutz groups were more cooperative and were more influenced by the group representation conditions than were city groups. In Experiment 3, groups were compared in their selection of a group versus an individual goal. Kibbutz children gave more often to the group than did Israeli or U. S. city children, even under a condition in which the group oriented response was economically nonadaptive.

Between and Within Group Cooperation and Competition Among Kibbutz and Non-Kibbutz Children[1]

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The Israeli Kibbutz, with its unique structure, provides a setting that is rich in potential for the study of group processes. Socialization of children in the Kibbutz is based on a planned system of collective education under which children are raised in collective peer groups (Kvutza) until about the age of 18. In this Kvutza community, which is a separate physical unit within the Kibbutz, children eat, sleep, play, and work, and are expected to learn to share, take turns, and in general cooperate as a group. Several authors have described the cooperative and anti-competitive values held by both parents and children of the Kibbutz (Spiro, 1958; Manor, 1965; Rabin, 1965; Rabkin, 1969).[3]

The three studies that are presented in this paper were designed to assess the effect of the Kibbutz collective socialization in comparison with non-Kibbutz groups at experimental choice points in which opportunities for both cooperative and competitive behavior are present. In the first two studies a technique is used in which differences in the within group cooperative-competitive behavior of children was previously demonstrated between subcultural groups in Mexico and the United States (Madsen, 1967; Madsen & Shapira, 1970). In a previous study in Israel (Shapira & Madsen,

1969) Kibbutz children demonstrated greater within group cooperation than did Israeli city children.

The above experiments were concerned only with cooperation-competition within groups. There are indications, however, that the competitive motive is present among Kibbutz children, but it is exhibited as competition between rather than within groups. Manor (1965) has described competition in Kibbutz society as having the form of "socialist competition" in that competition exists between groups rather than between individuals. Presumably such socialist competition has some similarity to that prevalent in the Soviety Union as described by Bronfenbrenner (1970).

Shapira and Madsen (1969) observed that while Kibbutz children were cooperative within groups, they were also very concerned about how well they were doing in relation to other groups. The present experiments, therefore, assess not only within group cooperation-competition, but also the effect of experimental conditions designed to emphasize between group competition.

The over 300 Kibbutz children who participated in the present study were from 17 different Kibbutzim ranging in size from the smallest of 130 members to a very large Kibbutz of nearly 1000 members. All children in the sample were born and raised in the Kibbutz. Children from each of the three large Kibbutz movements were represented; Hakibbutz Ha'Artzie, Hakibbutz Ha'Meuhad, and Ihud HaKibbutzim Veha'Kvutzot. The Kibbutz children were compared to children selected from 10 different elementary schools in the city of Haifa in all three experiments, and also with children in the city of Inglewood, California in Experiment 3.

Experiment 1

This experiment was designed to assess the degree to which Kibbutz as compared to Israeli city children cooperate or compete in a situation in which competitive behavior is nonadaptive in terms of reward attainment. It was predicted that Kibbutz children would be more cooperative than city children when playing as individuals and that competition among Kibbutz children would increase when playing as members of a group against members of other groups.

Method

Subjects. Ninety-six Kibbutz and 96 city children ranging in age from nine to 11 and equally divided between sexes served as subjects.

Apparatus. The cooperation board (Madsen, 1967) was used (Figure 1)

Insert Figure 1 about here

This board is 18 inches square with metal eyelets mounted on each corner. Four strings are attached to a plastic weight which serves as a holder for a ball point pen filler. One string is threaded through each eyelet and is held by a subject who is seated near the corner of the board. The board is covered with a new sheet of paper for each trial resulting in a recording of the responses of subjects as they pull their strings in an attempt to draw lines over target circles. The target circles, as indicated in Figure 1, are placed in positions which are impossible to cross by the effort of any individual subject, thus making cooperation between all subjects necessary in order for circles to be crossed.

Design and procedure. Twenty-four groups of four, 12 male and 12 female, of both Kibbutz and city children operated the cooperation board for four

trials. Prior to the test trials, the experimenter demonstrated how lines could be drawn on the paper by pulling strings. Each subject then had a brief experience in pulling his string and drawing a line while the other three subjects released their strings. After pretraining, one-half of each subgroup operated the board under one of two experimental conditions.

Self condition. The name of each child was written in the circle to his left. Children were then told that they would receive a prize each time that the circle that had their name was crossed, and that any circle could be crossed any number of times during each of four one-minute play periods. During play the experimenter announced the appropriate child's name each time a circle was crossed. A new recording paper was used for each of the four trials, but prizes were not distributed until after the fourth trial.

Group condition. Under the group condition an effort was made to create a group identity among groups of four children. This was accomplished by assigning the group a color which was pinned on each group member, and by having the group vote on a group name. A representative of a group then operated the cooperation board with three other children who were representatives of other similarly constructed groups. After completing four trials other group representatives were sent to play with no contact allowed between those who had and had not played. The instructions differed from the self condition in that group rather than individual names were written in the circles and children were told that the prizes won would be distributed among members of the group which they represented. The prizes were penny prizes such as rings, plastic toys, whistles, balloons, etc.

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Results and Discussion

The mean number of circles crossed by condition and culture with sex and trials collapsed is presented in Table 1. A 2 x 2 x 2 x 4 (culture

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Insert Table 1 about here

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x condition x sex x trials) analysis of variance indicated significant differences due to culture (F 14.23, df 1/40, $p < .001$) and trials (F 17.03, df 3/120, $p < .001$). The effect of conditions approached but did not reach the .05 level of significance. The only significant interaction was trial x culture (F 4.22, df 3/120, $p < .01$) which was due to the fact that the city children improved from 1.5 circles crossed on trial one to 3.4 on trial four while the Kibbutz children showed a much greater increase, 5.3 on trial one to 11.0 on trial four. Sex differences did not approach statistical significance.

The main result is that the Kibbutz children behaved much more cooperatively than did the city children under both experimental conditions. Although not highly significant statistically, within group cooperation was differentially affected under the two conditions indicating, at least for some Kibbutz children, the existence of nonadaptive within group competition when the between group compeitive motive was present.

In comparison with the city children, however, the behavior of the Kibbutz children was dramatically more cooperative under both conditions as reflected in the number of circles crossed and also by the verbal interaction within groups. Behavior of the city children was characterized by unrestrained, unorganized and almost violent pulling against one another. Some individuals within city groups seemed to recognize the futility of

their behavior but the leadership, organization, and trust necessary for cooperative interaction did not occur. A child sometimes suggested cooperation but was either ignored or refuted. When asked how they could have gotten more prizes, in informal post-trial interviews, many city children said that they could have taken turns but invariably added that the other children would not have agreed. This remark was sometimes made by all four members of a competititve group.

Competitive interaction similar to that of the city groups was present in only one of the 24 Kibbutz groups. Kibbutz groups characteristically demonstrated a high degree of organization, usually under the direction of a voluntary leader or organizer, with much verbal communication and planning taking place both prior and during the play period. On rare occurances when a Kibbutz child interfered with group success, **verbal** pressure to conform to the group goal was employed by the other group members.

Experiment 2

This experiment was also designed to compare the behavior of Kibbutz and city children under within group and between group motivational conditions. In an effort to increase the likelihood of competitive behavior, the reward system emphasized conflict of interest by introducing an unequal distribution of rewards within trial. Of particular interest was an assessment of the degree to which Kibbutz within group cooperation would be affected by the introduction of competition between groups as compared with the city children.

Method

Subjects. Ninety-six Kibbutz and 96 city children, ranging in age from eight to 11 years, served as subjects. None of the subjects participated in Experiment 1.

Apparatus. The same cooperation board and type of prizes as used in Experiment 1 were used. The only variation was that the four target circles were drawn at the corners of the recording sheets so that each child had a circle directly in front of him.

Design and procedure. Twelve groups of four like-sexed children from each of the two cultural groups participated under a within group competition condition and 12 similarly constructed groups from each culture participated under a between group competition condition.

Within group condition. Subjects were seated at each of the four corners of the board and told that they were going to play a game in which they could get prizes. The experimenter then demonstrated how lines were drawn when the strings were pulled. Each subject's name was written in the circle in his corner and subjects were told that on each trial the one who crossed his circle first would receive four prizes, the second one to cross his circle would receive three prizes, the third two prizes, the fourth one prize, and that anyone who did not cross his circle within one minute would receive no prize. Children were also instructed that they would not be rewarded for crossing their circle a second time on the same trial. Four one minute trials were then given with a new recording sheet used for each trial. If all four circles were crossed in less than one minute, the trial was terminated.

The unequal reward distribution and the time limitation sets up a conflict of interest situation in which competition is nonadaptive. If a child tries to maximize his reward by being first to cross his circle and the other children are similarly motivated, one child is pulling against three which usually results in no circles being crossed.

Between group condition. The same procedure was followed as in the within group condition with the exception that competition between groups was introduced. Eight children at a time were taken to the test room and divided into two groups of four and told that the groups would be competing against each other and that the group that corssed the most circles over four trials would be declared the winner. The designation of a group winner was in addition to prizes won individually. In this condition, effective competition between groups was contingent upon cooperative turn taking within groups.

Results and Discussion

The mean circles crossed by the two cultural groups by condition and sex are presented in Table 2. The results were analyzed by a 2 x 2 x 2 x 4

Insert Table 2 about here

(culture x condition x sex x trial) analysis of variance. The Kibbutz groups corssed more circles than the city groups but this difference reached only a marginal level of statistical significance (F 3.35, df 1/40, $p < .10$). Groups in the between group competition condition crossed significantly more circles than did those in the within group condition (F 7.83, df 1/40, $p < .01$). Both cultural groups (sex collapsed) crossed more circles in the between than in the within condition but the difference was greater

for the Kibbutz groups. F tests of simple effects indicated a significant condition effect for the Kibbutz groups (F 9.4, df 1/40, $p<.01$) but not for the city groups.

The overall difference due to sex was significant with a mean number of crossings of 2.8 by boys and 1.4 by girls (F 10.93, df 1/40, $p<.01$). Boys crossed more circles in three of the four culture x condition cells but the difference is most pronounced for the city groups under the between condition. Sex interacted with both condition and culture at the .05 level of significance. The effect of trials was significant at the .05 level reflecting a small increase from trial one through four by most groups.

The results indicate that the addition of between group competition, even when no material rewards resulted from winning, served to reduce internal group conflict and increase within group cooperation, and that this was more true for Kibbutz than city children. F tests of simple effects indicated no significant differences between any of the four culture x sex subgroups under the within group competition condition. In the between group condition, however, city girls crossed significantly less circles than did each of the other three subgroups ($p<.05$) who did not differ significantly from each other.

That the largest sex differenece occurred in the city under the between group condition may reflect differential socializing in the two settings. City boys typically participate in team structured activities and neighborhood peer groups in which competition against other groups and cooperation within groups are emphasized while girls are less often

involved in team activities. The Kibbutz, on the other hand, is noted for a minimum of sexual differentiation in socialization practices.

Although results cannot be compared statistically, the Kibbutz were substantially more competitive in the present within group condition than were Kibbutz children in Experiment 1. Competitive motivation in Kibbutz children, at least under some conditions, is therefore strong enough to refute any notion that competitive motivation between individuals does not exist in the Kibbutz personality.

In the present study, the outcome on each trial was necessarily unequal. It was possible, however, to equalize the outcomes across the four trials by systematically rotating the order of circle crossings on each trial. Of the 13 Kibbutz groups who were completely cooperative, 10 employed this rotation method. All of the six completely cooperative city groups also used this method. Three completely cooperative Kibbutz groups ignored equality and followed the same order on each trial. When questioned later these children indicated that a same order technique was used because group winning took precedence over individual reward. One of these Kibbutz groups was observed dividing the prizes equally after the competition was completed.

Experiment 3

In the previous two studies, cooperative behavior facilitated both individual and group gain. In the present study, group success and individual gain were mutually exclusive and conflicting alternatives. The purpose of the study was to assess the extent to which immediate economic outcome was a consideration in the decision to choose between individual and group gain.

Subjects were required to choose between keeping a prize for themselves or contributing the prize for the benefit of their group under a condition in which group contribution led to no personal loss as compared to another condition in which group contribution was at the expense of personal economic gain. Of particular interest was the determination of the extent to which Kibbutz children would contribute to a group goal at the expense of individual gain as compared with Israeli city children and children in the United States who were also included in this study.

Method

Subjects. 128 Kibbutz, 128 Israeli city, and 128 children in the United States, ranging in age from eight to 11 years and equally divided by sex, served as subjects. The Israeli children were from settings previously described although none had participated in Experiments 1 and 2. The American children were enrolled in a single elementary school in Inglewood, California, a city in the urban Los Angeles metropolitan complex. The population served by the school was described by school authorities as predominately upper-middle class.

Design and procedure. Children participated in like-sexed groups of four. Each cultural group was composed of 32 such groups, 16 of each sex. Sixteen groups, eight of each sex, participated in one of the two experimental conditions. Children were brought to the experimental room in groups of eight and then divided into two groups of four and told that the two groups would be playing a game against each other. One group then waited outside while the other group played. Upon completion the groups exchanged places and the second group played with no communication between groups during the changeover.

The four group members were seated around a table on which were placed 16 cards. Children were instructed that they would take turns picking up a card and that each would have four turns. After each turn children had the alternatives of keeping the card or putting it in a group box. They were told that they would receive one prize for each card retained and that a group prize would be shared if their group box contained more cards than that of the competing group at the end of play.

In Condition 1 the group prize consistened of 16 prizes and it was explained that each child would get four prizes if their team won, a number equal to what they would receive if they retained all four cards. In Condition 2 the group prize consisted of four prizes, one prize each for members of the winning group. Thus group contributions under Condition 2 were nonadaptive in terms of immediate economic gain. Children were asked to explain the reasons for their choices in an informal interview following the game, after which the two groups were brought together for distribution of prizes.

Results and Discussion

The mean cards per group contributed to the group box by culture and condition is presented in Table 3. A 3 x 2 x 2 (culture x condition x

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Insert Table 3 about here

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sex) analysis of variance indicated significant differences due to culture ($F = 6.24$, $df = 2/84$, $p < .01$) and to condition ($F = 4.00$, $df = 1/84$, $p < .05$). There were no significant differences due to sex and no significant interactions. F tests between culture means indicated that Kibbutz groups contributed more cards to the group than did the Israeli city children ($p < .01$)

or the American children ($p < .01$) while the latter two groups did not differ significantly from each other. Simple comparisons between culture means under the two conditions indicated that U. S. city and Kibbutz groups did not differ significantly under the two conditions but that Israeli city groups contributed significantly more cards under Condition 1 than Condition 2 ($p < .05$).

The results are consistent with the results of Experiments 1 and 2 in that Kibbutz children demonstrated more group oriented behavior than did the other cultural groups. The most striking finding however, is that Kibbutz groups contributed almost equally to the group under the two experimental conditions. Kibbutz children, therefore, were not only more willing to contribute to a group goal than were the city children, but they were willing to take a substantial economic loss in order to do so. The Kibbutz group oriented behavior resulted in their receiving fewer mean prizes per group (9.8) than the Israeli city (12.1) or American children (11.4). This difference was mainly due to the results under Condition 2 in which group responses were economically nonadaptive. The results also clearly indicate that motivation to achieve group success, although not as pronounced as in Kibbutz groups, was present to some extent among city children.

Sixty-two Kibbutz, 44 Israeli city and 19 U. S. children gave all four cards to the group. Two Kibbutz, 22 Israeli city and eight U. S. children retained all four cards for themselves. U. S. children therefore more often split their cards between self and group than did children of the other groups.

The informal post-trial interview, in which children were asked to explain the reasons for their choices, revealed interesting qualitative differences. Nearly all Israeli children, both Kibbutz and city, who contributed to the group readily explained their behavior. The most frequent response was simply that they wanted the group to win, and less frequently that it is not good to be selfish. American children who gave to the group were often more obscure in their explanations, such as, "I felt like it," "I don;t know," "I didn't like the cards," "I didn't have a reason." Some Israeli children presented long and elaborate statements on the value of people working together as a group while the U. S. children had very little to say and some even seemed to be embarrassed and defensive when attempting to explain their group oriented choices.

The children who kept most of the cards for themselves (4 or 3) responded quite differently. Most of the U. S. children readily answered that they wanted all the prizes that they could get or that they wanted to get more than the other children. Some U. S. children explained that they kept some of their cards so that they would get prizes but that they gave one to the group so that they might also get a group prize. Israeli children who kept cards for themselves usually gave brief and unelaborated answers such as, "I wanted to," "Just because," and "I don't know," often accompanied by much apparent embarrassment. In general, Israeli city children responded during the interviews quite similarly to children of the Kibbutz even though their behavior in the experimental situation was more like that of the U. S. children.

Summary

The results of the three experiments, taken together, indicate that Kibbutz children are more cooperative within groups than their urban counterparts. It is also clear that the Kibbutz children are competitively motivated, but that this motivation is channeled to between group competition to a much greater extent than to between individual competition. The founders of the Kibbutz system envisioned the development of a new personality by raising children in an economic collective in which interpersonal relations based on mutual trust, sharing, and group solidarity would be stressed. The results of the experiments reported in this paper indicate that in the area of cooperation, the Kibbutz founders have been successful.

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Footnotes

1. The results on the Israeli children were included in a Ph.D dissertation by the first author submitted to the Department of Psychology, University of California, Los Angeles. The entire project received partial support through the UCLA Early Childhood Research Center, Dr. Carolyn Stern, Director, Grant CG9938, Office of Economic Opportunity.
2. Requests for reprints should be sent to Ariella Shapira, Department of Psychology, University of Tel Aviv, Tel Aviv, Israel.
3. An extended description and literature review of child rearing in the Kibbutz and its relation to the development of cooperative-competitive values is available in mimeographed form from the first author.

TABLE 1

Mean Circles Crossed by Culture and Condition
(Sex and Trials Collapsed)

Condition	Culture	
	City	Kibbutz
Self	3.0	10.4
Group	2.1	6.4

TABLE 2

Mean Circles Crossed by Kibbutz and City Groups by Condition and Sex
(Trials Collapsed)

Condition		Culture	
		City	Kibbutz
Within group competition	Boys	2.00	1.40
	Girls	.86	1.74
Between group competition	Boys	3.60	4.00
	Girls	.34	2.66

TABLE 3

Mean Group Contributions by Culture and Condition
(Sex Collapsed)

Condition	Culture		
	U.S. City	Israeli City	Kibbutz
Group reward equal to individual	9.9	11.0	12.6
Group reward less than individual	8.6	8.0	12.3

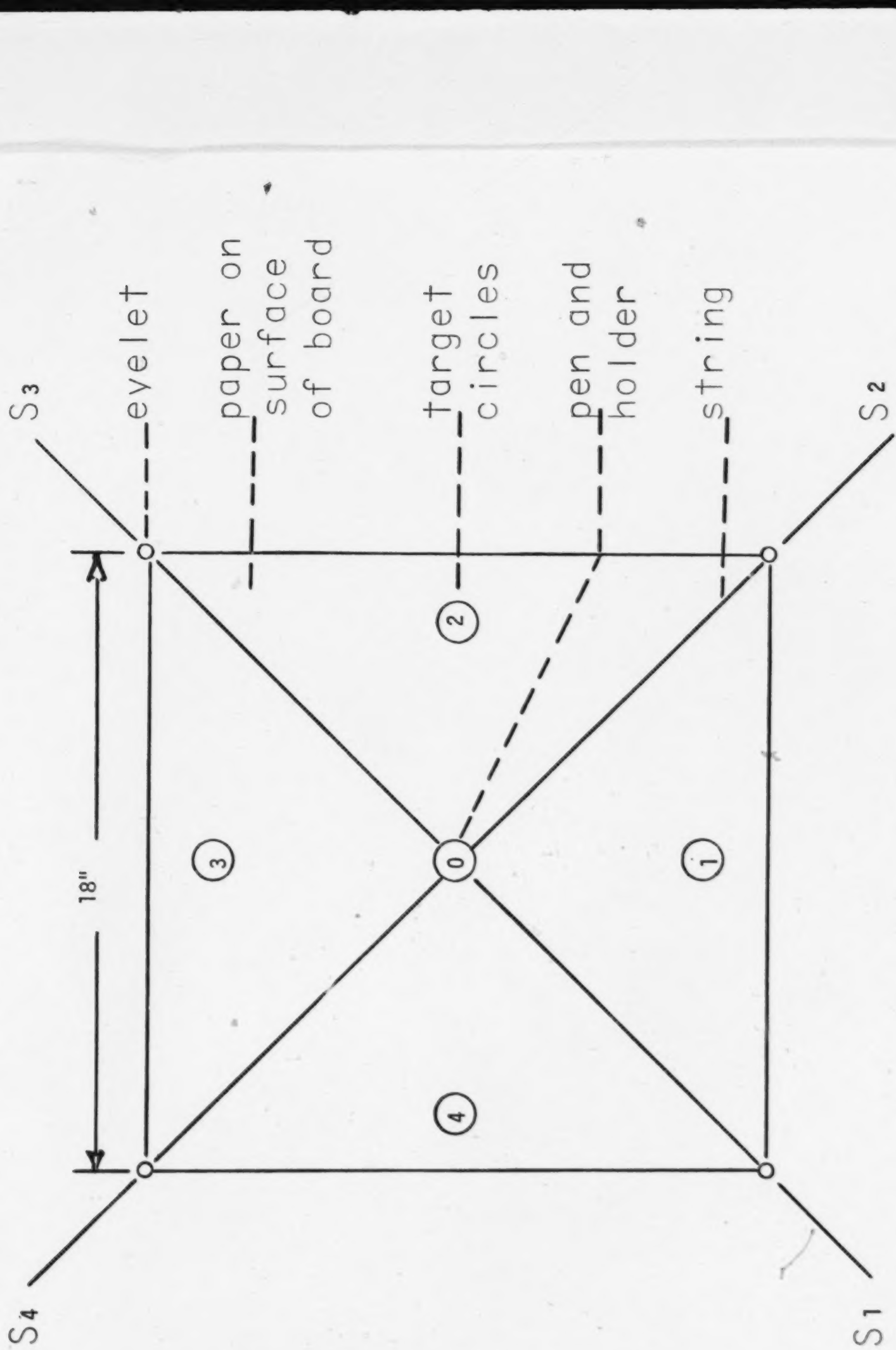

Figure 1. Madsen cooperation board